BIO CLEAN INTEGRATED AIR SYSTEM

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Naval Multi Speciality Hospital

SHALBY HOSPITALS MULTI-SPECIALTY CARE

Safetab Life Science

GUJARAT FLUOROCHEMICALS LIMITED

Global Pharma Healthcare Ltd.

AVANTOR PERFORMANCE MATERIALS

Piramal knowledge action care

Durable / Reliable / Safe / Economical

BIO CLEAN INTEGRATED AIR SYSTEM

Better Air Cleanliness is our Business

Design Build & Project Solution for Healthcare Industries

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Green Field Project People

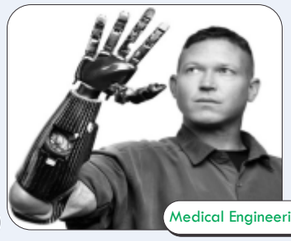
BIO CLEAN INTEGRATED AIR SYSTEM PVT LTD

Better Air Cleanliness is our Business

Design Build & Project Solution for Healthcare Industries

Pharmaceuticals

Bio Technology



Medical Engineering

Food Processing

Electronics

HVAC CONCEPT FOR STERILE AND COMFORT APPLICATIONS

PREFABRICATED MODULAR OPERATION THEATRES

PREFABRICATED MODULAR CLEANROOMS

PREFABRICATED STEEL DOORS & FRAMES

STERILE AIR FLOW EQUIPMENT'S

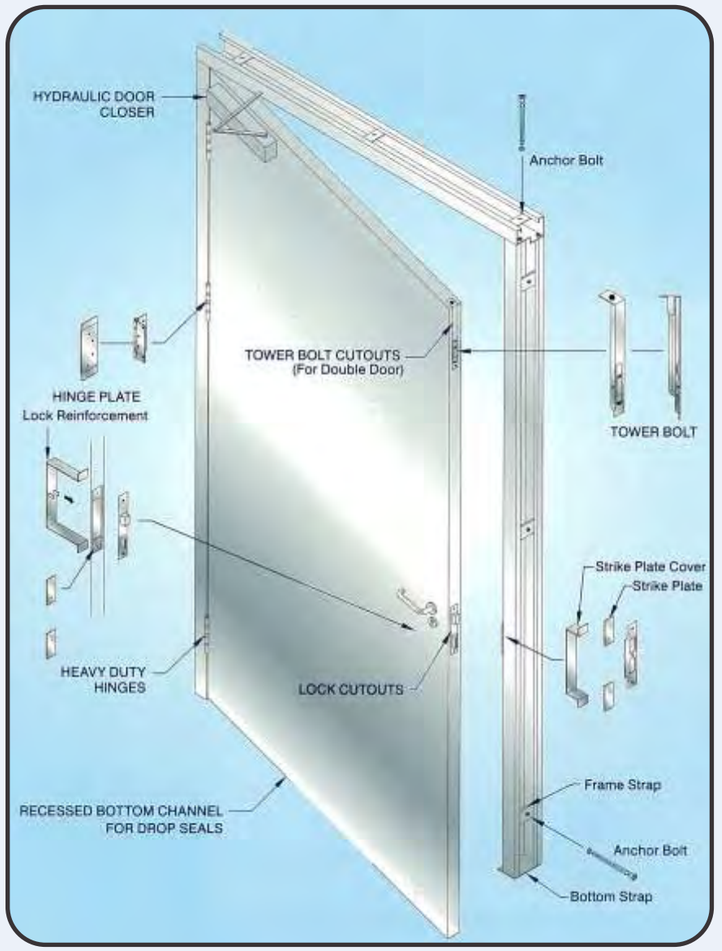
Hospitals

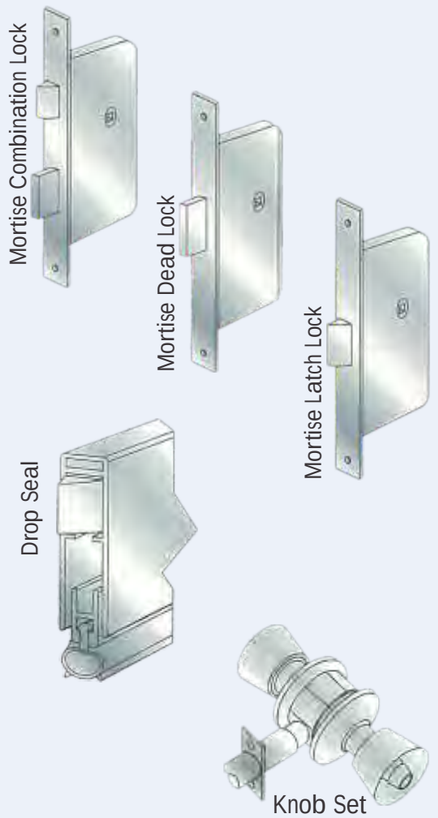
COMPANY PROFILE

We are young vibrant and enterprising company promoted to cater to the requirements of PREFABRICATED structures, HVAC For Healthcare industries.

We have full-fledged production facility at Palghar,Maharshtra & Himachal Pradesh in India, where we manufacture various HVAC, Modular Panels & Clean Room equipment for the healthcare industries.
At Bio Clean IAS we believe that "The best way to excel…. Is to do quality work".
We strive to maintain our belief through continuous dynamism in customer care and satisfaction, through superb quality, time frame and genuine products along with excellent after sales service.
Our major strength is our qualified, experienced professionals who are well versed with all HVAC, Modular Panels & Clean room equipments for healthcare standards to offer simple, innovative and straight forward solutions to any and every constraint in the execution of a project.
Our unwavering efforts at providing quality service and high standard products have enabled us to obtain a strong foot hold in the industry.

DOOR FRAME & LEAF CONSTRUCTION





Fire Proof Door

Fire Door

PREFABRICATED STEEL DOORS AND FRAMES

TECHNICAL SPECIFICATION

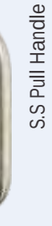
Description	-	B-Clean Metal Doorsets and Frames
Construction	-	Door leaf from 1.0 mm (1.2 mm) (1.6 mm) thick slip coated pre-galvanised steel sheet to ASTM A527 / ASTM A525, JIS G 3302 or BS 2989 (1994). Zinc coating 80-120 g/m2. Lock formed panels with internal stiffeners, 3.0 mm thick hinge reinforcing, hardware mounting plates and lock protection.
		Door frame from 1.2 mm (1.6 mm) (2.0 mm) thick pre-galvanised steel sheet with mitred and welded corners, frame stretchers, hinge reinforcing plates, fixing plates and hardware mounting plates.
Core Materials	-	Door leaf filled with either puf, rockwool, honeycomb, infill dependant on duty.
Finish	-	Pow-coated surface.
Fixings	-	Fixing through frame by expansion bolt
	-	Mortar Straps.
Frame Assembly	-	Welded construction with frame spreaders.
	-	Bolted frame construction.
	-	Knock-down frame construction for wrap around frames.
Glazing	-	Glazing to door leaf.
	-	Glazed overpanels in frames
Fire Resistant	-	Up to 2 hours fire resistance in accordance with BS:476 Part 20 & 22 and IS:3614 (Part 2) dependant on construction.
Acoustic Properties	-	Up to RW 44 for 60mm thick doorleaves with special frames and ancillary seals.
Sizes	-	Up to 3000 mm high and 3000 mm wide subject to test data limitations.
MOC	-	Electro Galvanized steel, EG (Pure Zn, ASTM A591).
	-	Galvanized Steel (with A60 Zinc Coating Conformation to ASTM A25).
	-	Cold Rolled Steel (ASTM 366-91).
	-	Stainless Steel (Type 304 / 316 stainless steel, #4 finish PVC coated).

Electro Galvanized Steel

Euro Single Cylinder Lock

Door Closer

S.S Pull Handle



S.S Pull Handles

Emergency Panic Bar

Butterfly Hinges

Dead Mount Lock

LAMINAR AIR FLOW EQUIPMENT SYSTEMS
VERTICAL LAMINAR AIRFLOW UNIT

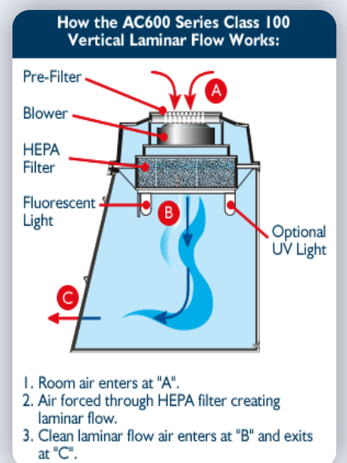
BC IAS-VLAF is designed for offering highest product protection for samples and processes by providing ISO class 5 particle free work station. VLAF offers proven protection for samples and processes. The work station is continuously supplied with positive pressure HEPA filtered vertical air flow.

The vertical unidirectional airflow speed prevents contamination from operator and environment to work station. The laminarity of the flow prevents cross contamination between the items handled in the working space.

BC IAS-VLAF is available in powder coated G.I steel, S.S.316, S.S.316 L or a combination of both

GENERAL SPECIFICATIONS

- Glass side panels
- Two stage filtration
  - EU6 – Prefilters (95% down to 5 micron)
  - EU14 – HEPA filter (99.999% down to 0.3micron) at supply position
- Statistically and dynamically balanced motor blower with suspension arrangement to reduce noise level.
- SS work table with due reinforcement
- Fluorescent lights with milky white diffuser
- Differential pressure gauge : 1no
- On / off switches
- Clean down timer with operation hold indicator
- DOP test port
- 5/15 Amp switch socket for external equipment.



OPERATING CONDITIONS (HORIZONTAL & VERTICAL)

Air cleanliness	:	ISO class 5 (ISO 14644-1:1999(E))
Air velocities	:	0.45 +/_ 0.05mps
Air flow	:	Horizontal
Noise level	:	less than 67db
Vibration level	:	minimum
Light intensity	:	>300Lux
Power supply	:	230V AC 1-Ø 50HZ

OPTIONS AND ACCESSORIES (HORIZONTAL & VERTICAL)

A wide range of configurations to suit any containment application:

- Front doors (Hinged / Pneumatic cylinder
- U.V.Light with hour meter
- S.S.304 Air /Gas cock
- Night mode operation
- Filter blocked alarms (Audible and visible)
- Velocity display with alarms (Audible and visible)
- Explosion proof electrics for flame proof applications.

Working size	2' x 2' x 2'	3' x 2' x 2'	4' x 2' x 2'	6' x 2' x 2'
Horizontal	BCH 0600	BCH 0900	BCH 1200	BCH 1800
Vertical	BCV 0600	BCV 0900	BCV 1200	BCV 1800

HORIZONTAL LAMINAR AIRFLOW UNIT

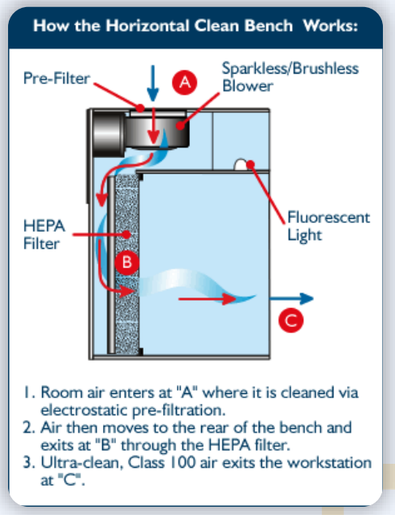
BCIAS-HLAF is designed for offering highest product protection by providing ISO class 5 particle free work station for handling critical process. HLAF offers proven protection for samples and processes. The work station is continuously supplied with positive pressure HEPA filtered horizontal air flow.

The horizontal unidirectional airflow speed prevents contamination from operator and environment to work station such as injectable medicines, cell and tissue cultures, food sample preparation for sterility testing, sterile packaging and I.V. pharmacy preparations as well as micromechanics, optics, electronics.

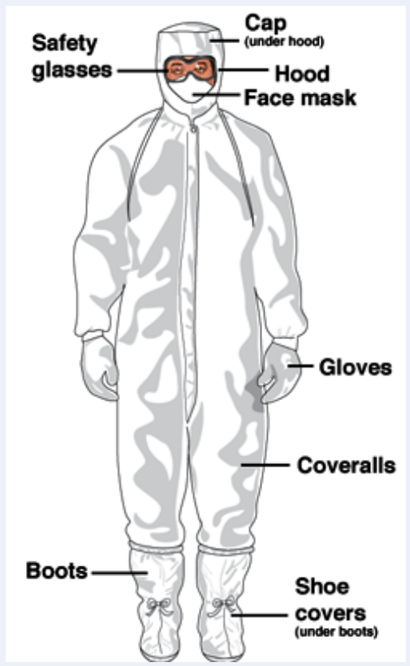
BCIAS-HLAF is available in powder coated G.I steel, S.S.316, S.S.316 L or a combination of both

GENERAL SPECIFICATIONS:-

- Glass side panels
- Two stage filtration
  - EU6 – Prefilters (95% down to 5 micron)
  - EU14 – HEPA filter (99.999% down to 0.3micron) at supply position
- Statistically and dynamically balanced motor blower with suspension arrangement to reduce noise level.
- SS work table with due reinforcement
- Fluorescent lights with milky white diffuser
- Differential pressure gauge : 1no
- On / off switches
- Clean down timer with operation hold indicator
- DOP test port
- 5/15 Amp switch socket for external equipment.



CLEAN ROOM GARMENTS AND MEDICAL PRODUCT



Don disposable shoe covers. Take three steps across tacky mat before entering airlock.

ISOLATOR TECHNOLOGY

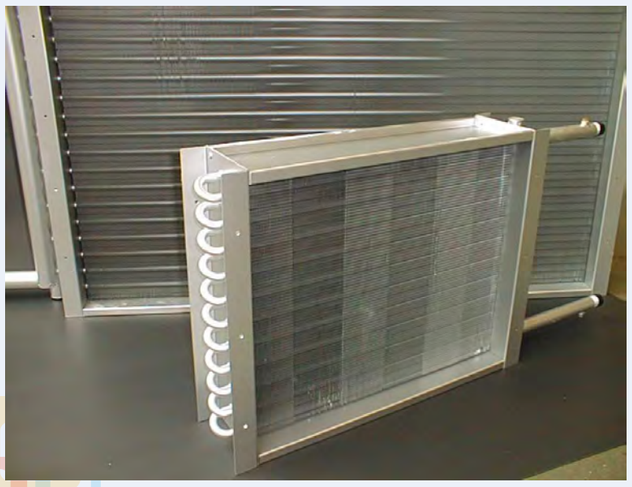
BC IAS Air Handling Units

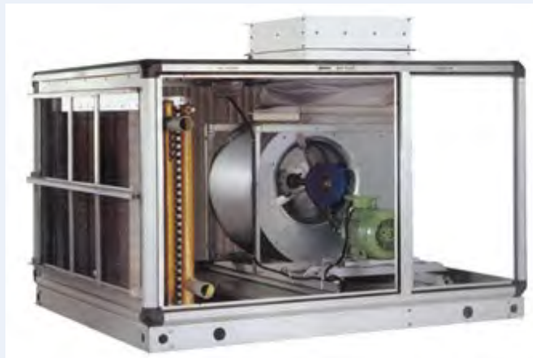
An Air Handling Unit is usually a large metal box containing a blower along with motor arrangement, cooling and heating coils, different types of filter chambers, and volume control dampers. Air handlers usually connect to duct distribution system that distributes the conditioned air through the building and returns it to the AHU.

AHU colling coils are avialble in Chilled Water, Hot Water Coils Braine System & DX Systems.

BC IAS Offer Wide Range Of Air Handling Units

- Floor mounded Air Handling units.
- Double skin air handling units
- Single skin air handling units
- Re circulation Air Handling units
- Ventilation Air Handling units
- Dehumifiers
- Heat recovery ventilator (HRV) Air Handling units





BCIAS-AIR SHOWER ENTRY SYSTEM

BCIAS –Air shower is designed to supply class 100 HEPA filtered air at high velocity to remove particulate matter from the person entering in to the sterile room.

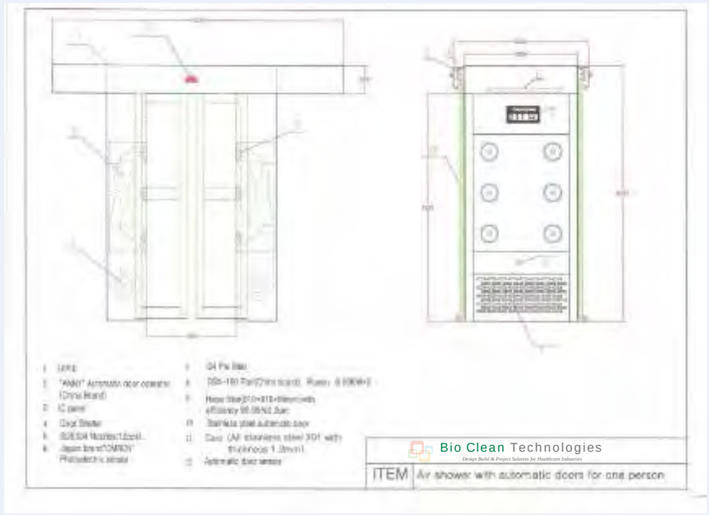
GENERAL SPECIFICATIONS

I Two stage filtration
  - o Eu6 – Prefilter (95% down to 5 micron)
  - o Eu14 – HEPA filter (99.999% down to 0.3micron) for return air & fresh air intake.

I Statistically and dynamically balanced motor blower with suspension arrangement to reduce noise level for suction and booster.
I S.S. 304 doors with double walled flush glass view panels & door closer
I Double skin puf filled side panels
I Horizontal internal covings at base
I Fluorescent lights with milky white diffuser
I Differential pressure gauge : 1 no
I On / off switches
I Timer for setting air shower operation time (settable for 30 seconds to 5 minutes)
I DOP test port
I 5/15 Amp switch socket for external equipment.
I Control systems – to ensure that both the doors cannot open at the same time & to ensure that both the doors will be locked during the time airflow is on.

OPERATING CONDITIONS

Air cleanliness	:	ISO class 5 (ISO 14644-1:1999(E))
Air velocities	:	0.45 +/_ 0.05mps
Air flow	:	Horizontal & Vertical
Noise level	:	less than 67db
Vibration level	:	minimum
Light intensity	:	>300Lux
Power supply	:	415V AC 3-Ø 50HZ



REVERSE LAMINAR AIR FLOW UNITS (DISPENSING / SAMPLING BOOTHS)

BCIAS-RLAF is designed for providing highest level of protection from air borne contaminants generated during powder handling operations such as sampling, charging & dispensing.

BCIAS-RLAF provides:

I Operator protection
I Product protection
I Environment protection

The down flow booth operates on a recirculatory airflow principle providing containment by air movement. A clean, constant, laminar down flow of class 100 air is supplied in workstation suppressing any dust clouds generated during open powder processing; removing and capturing airborne from the operator's breathing zone.The prefilters at the base of the real wall capture the airborne contaminants generated. Intake velocity at prefilters increases to ensure scavenging effect.

A small percentage of air is discharged from the booth through the bleed exhaust HEPA filter to maintain the working space under negative pressure.

BCIAS-RLAF is available in powder coated G.I steel, S.S.316, S.S.316 L or a combination of both

GENERAL SPECIFICATIONS

I Three stage filtration
- o EU4 – Prefilters (90% down to 10 micron)
- o EU7 – Intermediate filter (95% down to 3 micron)
- o EU14 – HEPA filter (99.999% down to 0.3micron) at supply / exhaust

I Statistically and dynamically balanced motor blower with suspension arrangement to reduce noise level.
I Double skin puf filled side panels
I Horizontal internal covings at base
I Fluorescent lights with milky white diffuser
I Differential pressure gauge : 3 nos
I On / off switches
I Clean down timer with operation hold indicator
I DOP test port
I 5/15 Amp switch socket for external equipment.

OPERATING CONDITIONS

Air cleanliness	:	ISO class 5 (ISO 14644-1:1999(E))
Air velocities	:	0.45 +/_ 0.05mps
Air flow	:	Vertical – Recirculatory
Noise level	:	less than 67db
Vibration level	:	minimum
Light intensity	:	>300Lux
Power supply	:	230V AC 1-0 50HZ / 415V AC 3-0 50HZ

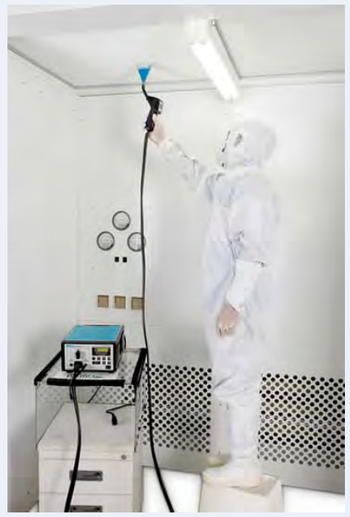
OPTIONS AND ACCESSORIES

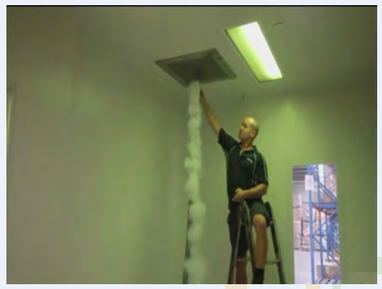
I Double skin side panels with view windows
I Stainless steel perforated grille for supply HEPA filters
I Front antistatic PVC curtains (for ware house applications)
I Front doors (Hinged / Sliding/Rapid roller)
I S.S stand alone table for keeping weighing scale
I Sodium vapor lamps I night mode operation
I Filter blocked alarms (Audible and visible)
I Velocity display with alarms (Audible and visible)
I Explosion proof electrics for flame proof applications.
I PLC based control system
I Once through airflow systems
I Safe change Bag in / Bag out arrangement for filters.

BC IAS CLEAN ROOM SERVICE AND VALIDATION

Bio Clean IAS is an Indian based company headquartered in Mumbai committed to providing leading-edge solutions for the clean room and micro-contamination industries.

BC IAS certification programs verify that your facilities perform to appropriate international standards and client specifications. Included with all testing is complete documentation of the test results and certification of the rooms and devices tested. An optional, customized formal report detailing test procedures, test results, and comprehensive conclusions of the testing performed can be included to suit your needs. All cleanroom testing is performed in accordance and compliant with Current Good Manufacturing Practices [cGMP], Institute of Environmental Sciences Technologies [IEST], and International Organization for Standardization BS EN ISO14644-1 & EUGMP



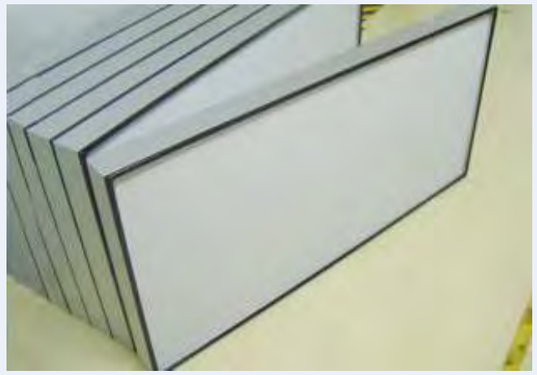


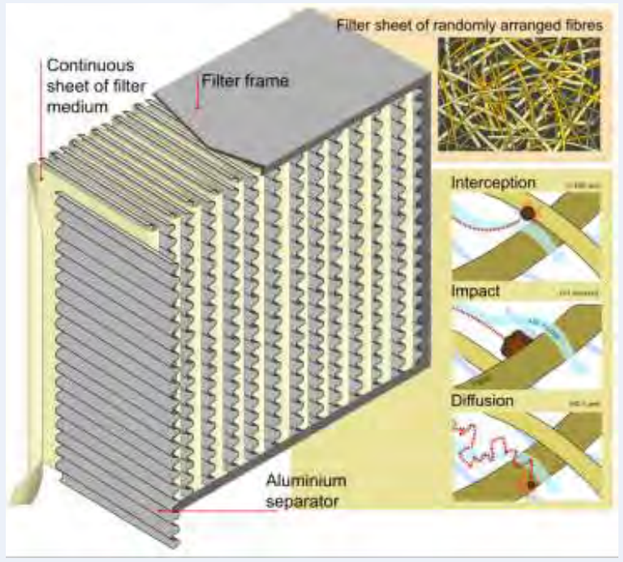
ULPA FILTERS

ULPA stands for ultra-low particulate air. Growing market demand from advanced science and technology led to development of ULPA filters which provide a minimum of 99.999% efficiency (0.001% maximum penetration) on 0.3micron particles for achieving better cleanliness classes and cleaner working environments. These are used for ultra-clean rooms, where contamination levels have to be controlled at levels better than that which can be achieved with conventional HEPA filters.

Boron free ULPA filters of 99.9997% efficiency for particles down to 0.12 micron size for class 10 and class 1 clean rooms are specially used in electronic / semiconductors / wafer manufacturing industries, where tolerance to contamination level above 0.12micron is also very critical and not permitted.

Note that the text information for instance on the efficiency @ 99.97% and 99.997% of HEPA filters look similar but in reality the difference is not insignificant. A 99.97% efficient filter has a fractional penetration of 0.0003; while a 99.99% filters fractional penetration is 0.0001. This means that a 99.99% filter is 3 times more efficient in removing 0.3micron particles.





LAMINAR AIRFLOW UNIT – GARMENT STORAGE CABINET

BCIAS-GSC is designed to provide ISO class 5(class 100) particle free work station to meet garment storage needs which avoids any particulate accumulation. The work station is continuously supplied with positive pressure HEPA filtered recirculated vertical /Horizontal air flow.

GENERAL SPECIFICATIONS

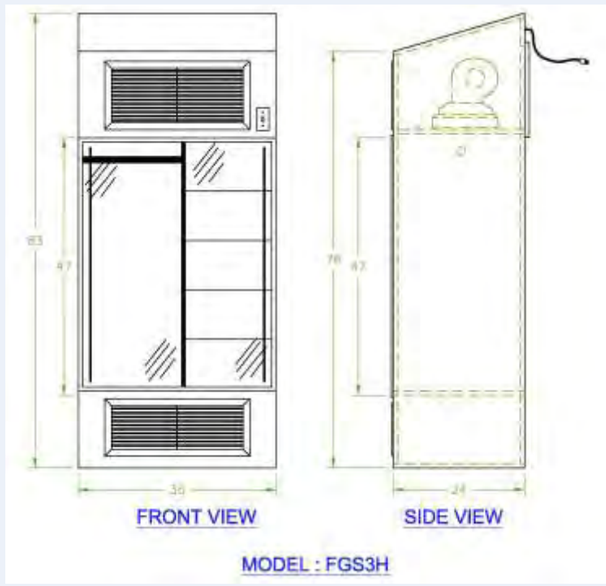
- Two stage filtration
  - EU6 – Prefilter (95% down to 5 micron) return & fresh air intake
  - EU14 – HEPA filter (99.999% down to 0.3micron) at supply position
- Statistically and dynamically balanced motor blower with suspension arrangement to reduce noise level.
- U.V.Light with hour meter
- Interlocking arrangement to put off U.V.light if either door opens.
- Differential pressure gauge : 1no
- S.S.304 Hanging arrangements /S.S.304 removable shelves
- S.S.304 doors with double walled flush glass view panels.
- Heater with thermostat
- On/Off switches
- DOP test port
- 5/15 Amp switch socket for external equipment.

OPERATING CONDITIONS

Air cleanliness	:	ISO class 5 (ISO 14644-1:1999(E))
Air velocities	:	0.45 +/_ 0.05mps
Air flow	:	Vertical / Horizontal / Recirculatory (Based on application)
Noise level	:	less than 67db
Vibration level	:	minimum
Power supply	:	230V AC 1-0 50HZ

OPTIONS AND ACCESSORIES

Blower tripping alarms
S.S.304 Air /Gas cock
Filter blocked alarms (Audible and visible)
Velocity display with alarms (Audible and visible)
Explosion proof electrics for flame proof applications.



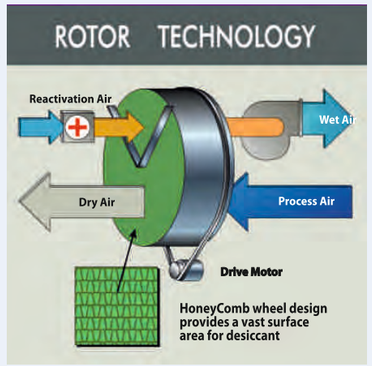
DEHUMIDIFIERS

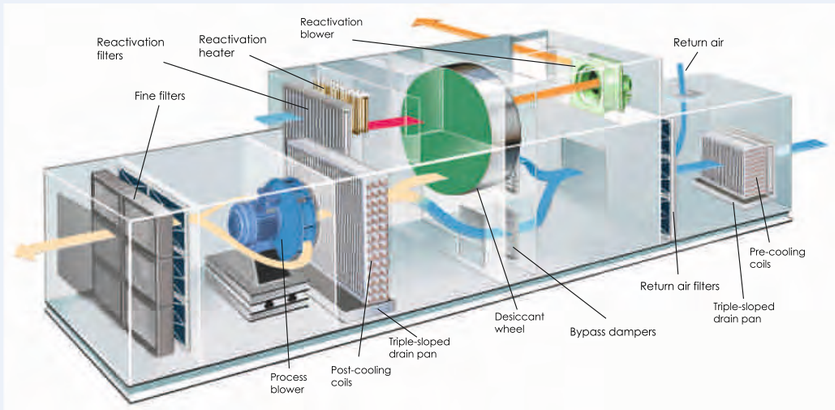
BC IAS offer REHOBOTH dehumidifiers operate on the principle of obsorption of water vapour from the air. The desiccant used is silica gel, which is formed on an inorganic substances.

Dehumidifiers available in size from 100CMH to 50,000CMH.

Dehumidifiers are available as standard units as well as packaged with pre-cooling, after-cooling, heating, heat recovery etc. for the most cost efficient enviroment control in various industrial application.

Units are designed with custom configuration of standard component to meet unique project requirements. Total system integration is also available including heating, cooling, bye-pass, pre filter for complete air handling and environment control needs.





Standard Product Range available in 13 models, 100-10000 CMH supply air, 4 to 64 kg/hr moisture removal.

Model	Process			Reactivation				Dimensions	Approx Weight
	Air Flow (CMH)	ESP (Pa)	Motor (H.P.)	Air Flow (CMH)	ESP (Pa)	Motor (H.P.)	Heater (KW)	lxwxh	(Kg)
RDS-30	300	200	0.25	100	240	0.25	3.5	1700 x 450 x 940	150
RDS-60	600	200	0.5	200	240	0.5	7	1700 x 550 x 1040	150
RDS-100	1000	200	1	300	240	1	12	1700 x 740 x 1200	180
RDS-150	1500	310	2	500	240	1	18	1800 x 740 x 1200	200
RDS-200	2000	310	2	700	240	1	24	1800 x 740 x 1200	225
RDS-300	3000	310	3	1000	240	1.5	30	2200 x 1000 x 1450	325
RDS-420	4200	310	3	1400	240	1.5	42	2200 x 1200 x 1550	400
RDS-500	5000	310	3	1600	240	2	50	2200 x 1200 x 1550	470
RDS-600	6000	310	5	2000	240	2	60	2500 x 1300 x 1550	540
RDS-720	7200	310	5	2400	240	2	72	2500 x 1400 x 1700	610
RDS-800	8000	300	5	2700	240	3	81	2500 x 1400 x 1700	700
RDS-900	9000	300	5	3000	240	3	90	2500 x 1550 x 1800	730
RDS-1000	10200	300	5	3400	240	3	102	2500 x 1550 x 1800	810

FILTERS - PRE FILTERS

- 3 micron prefilter.
- 5 micron prefilter.
- 10 micron prefilter.

High particle Air/Gas passes through PREFILTER to remove particles down to 5 micron from air/gas flow with efficiency exceeding 60-65% And 3 micron from air/gas flow with efficiency exceeding 70-75%. Prefilter is ASHRAE STD 52-76 equivalent to 98% on BS 2831 Test Dust II. The prefilter exclusive design ensures a large filtrating area in ratio to the face area. The filter element is constructed from "GLASS FIBER" paper. It is unique properties are…

PROPERTIES OF PREFILTERS & HEPA FILTER

- resists to mildew.
- Resists to fungal.
- Resists to bacteria.
- Resists to corrosive chemical fumes.
- Resists to hydrofluoric acid.

The fiber glass is sandwiched between 2 layers for 5 micron and 1 layer for 10 micron. The filter media is fire retardant type. The filter house is made from stainless steel sheet frame with flange and bonded on side using long life adhesive.

FEATURES OF PREFILTERS & HEPA FILTER

- ☆ Easy handling.
- ☆ Easy install.
- ☆ Easy removable.
- ☆ Easy cleaning.
- ☆ Use to temp. range (100°-600°C).

HEPA FILTERS

- Minipleat HEPA filters
- High temperature HEPA filter
- Aluminum HEPA filters.(100% DOP)
- Aluminum HEPA filters.(50% DOP)

High particle Air/Gas passes through HEPA FILTER to remove particles down to 0.3 micron from air/gas flow with efficiency exceeding 99.97%. The HEPA filter exclusive design ensures a large filtrating area in ratio to the face area. The filter element is constructed from "non woven fiber glass media" paper. It is unique properties are…

HEPA filter has high particles or dust retention capacity and high flow rate. HEPA filter units are made in standard size and are interchangeable. The filter media is fire retardant type. The filter media is assembled in a rigid frame made of aluminum section with locking insert and bonded to the frame on all sides using fire retardant type adhesive. A fire retardant gasket is used to avoid leakages. Each HEPA filter is to test conforming to international standards IES-RP-CC-001-86.

TECHNICAL SPECIFICATION

Clean Level	:	100 particles of size 0.5 microns / F^3
ISO Class	:	5(ISO 14644-1:1999(E))
Air Velocity	:	90 FPM (0.45MPS)+- 20%
Noise Level	:	<65 DB (A scale)
Vibration	:	<2.5m (0.0001")